Carlsbad Field Office
OCD Hobbs

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Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMM012280

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☑ Other INJ-DIS ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
NKATATA FEDERAL 001

2. Name of Operator
ROSEHILL OPERATING COMPANY LLC

9. API Well No.
30-025-44863

3a. Address
16200 Park Row, Ste 300 Houston TX 77084

3b. Phone No. *(include area code)*
(281)675-3420

10. Field and Pool, or Exploratory
~~CHERRY CREEK~~ SWD; CHERRY CANYON 97003

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SWSW / 2006 FNL / 1156 FEL / LAT 32.0595139 / LONG -103.3334856
At proposed prod. zone SWSW / 2006 FNL / 1156 FEL / LAT 32.0595139 / LONG -103.3334856

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 11 / T26S / R35E / NMP

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
LEA

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
230 feet	1240	0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
30 feet	7500 feet / 7500 feet	FED: NMB001484

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3052 feet	06/02/2018	30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Lara Thompson / Ph: (505)254-1115	01/11/2018

Title
Assistant Project Manager

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	05/16/2018

Title	Office
Supervisor Multiple Resources	CARLSBAD

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

KZ 05/31/18

Approval Date: 05/16/2018

1) Requires SWD ORDER
2) MAY NOT INJECT WITHOUT MIT TEST & BHT
3) CAN NOT INJECT UNTIL SWD ORDER APPROVED

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: SWSW / 2006 FNL / 1156 FEL / TWSP: 26S / RANGE: 35E / SECTION: 11 / LAT: 32.0595139 / LONG: -103.3334856 (TVD: 0 feet, MD: 0 feet)
   PPP: SWSW / 330 FSL / 790 FWL / TWSP: 26S / RANGE: 35E / SECTION: 11 / LAT: 32.0514343 / LONG: -103.3442896 (TVD: 12315 feet, MD: 12315 feet)
   BHL: SWSW / 2006 FNL / 1156 FEL / TWSP: 26S / RANGE: 35E / SECTION: 11 / LAT: 32.0595139 / LONG: -103.3334856 (TVD: 7500 feet, MD: 7500 feet)

BLM Point of Contact

Name: Priscilla Perez

Title: Legal Instruments Examiner

Phone: 5752345934

Email: pperez@blm.gov

Approval Date: 05/16/2018

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report
05/16/2018

APD ID: 10400025877 **Submission Date:** 01/11/2018

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Well Type: INJECTION - DISPOSAL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400025877 **Tie to previous NOS?** 10400022931 **Submission Date:** 01/11/2018

BLM Office: CARLSBAD **User:** Lara Thompson **Title:** Assistant Project Manager

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM012280 **Lease Acres:** 1240

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? YES **APD Operator:** ROSEHILL OPERATING COMPANY LLC

Operator letter of designation:

Operator Info

Operator Organization Name: ROSEHILL OPERATING COMPANY LLC

Operator Address: 16200 Park Row, Ste 300 **Zip:** 77084

Operator PO Box:

Operator City: Houston **State:** TX

Operator Phone: (281)675-3420

Operator Internet Address: afranco@rosehillres.com

Section 2 - Well Information

Well in Master Development Plan? NO **Mater Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: NKATATA FEDERAL **Well Number:** 001 **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** CHERRY CREEK **Pool Name:**

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: SINGLE WELL **Multiple Well Pad Name:** **Number:**

Well Class: VERTICAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: INJECTION - DISPOSAL

Describe Well Type:

Well sub-Type: INJECTION - DISPOSAL

Describe sub-type:

Distance to town: **Distance to nearest well:** 30 FT **Distance to lease line:** 230 FT

Reservoir well spacing assigned acres Measurement: 0 Acres

Well plat: Nkatata_Federal_SWD__1_Package_20171228110526.pdf

Nkatata_Federal_001_20180102095033.pdf

Nkatata_SWD_001_Ownership_Map_1mi_radius_20180102161200.pdf

Well work start Date: 06/02/2018 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	2006	FNL	1156	FEL	26S	35E	11	Aliquot SWSW	32.0595139	-103.3334856	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 012280	3052	0	0
KOP Leg #1	230	FSL	790	FWL	26S	35E	11	Aliquot SWSW	32.0511593	-103.3442896	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 012280	-8951	12003	12003

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	330	FSL	790	FWL	26S	35E	11	Aliquot SWSW	32.0514343	-103.3442896	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 012280	-9263	12315	12315
EXIT Leg #1	330	FNL	790	FWL	26S	35E	11	Aliquot NWNW	32.064132	-103.3443002	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 012280	-13943	16995	16995
BHL Leg #1	2006	FNL	1156	FEL	26S	35E	11	Aliquot SWSW	32.0595139	-103.3334856	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 012280	-4448	7500	7500

APD ID: 10400025877 **Submission Date:** 01/11/2018

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Well Type: INJECTION - DISPOSAL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	3064	760	760		NONE	No
2	TOP SALT	1923	1140	1140		NONE	No
3	LAMAR	-2033	5096	5096		OIL	No
4	BELL CANYON	-2097	5161	5161		OIL	No
5	CHERRY CANYON	-3308	6372	6372		OIL	No
6	BRUSHY CANYON	-4550	7614	7614		OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 18000

Equipment: See attachments titled Rosehill Drilling Equipment Description, wellhead diagram, Choke Hose Test Certificate, Proposed WBD

Requesting Variance? YES

Variance request: Variance is requested to use a co-flex line between the BOP and choke manifold instead of using a 4" OD steel line. Variance is also requested to use a 5,000 psi WP annular preventer.

Testing Procedure: All BOPE will be tested in accordance with Onshore Oil and Gas Order No. 2 using a conventional test plug. Not a cup or J-packer type. BOP/BOPE system will be tested to 250 psi low, followed by a 10,000 psi pressure test, to be repeated every 30 days.

Choke Diagram Attachment:

Choke_Manifold_Diagram_20171204105731.pdf

BOP Diagram Attachment:

BOP_stack_Diagram_20171204105722.pdf

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	925	0	925			925	J-55	54.5	STC	1.125	1.25	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4000	0	4000			4000	J-55	40	LTC	1.125	1.25	BUOY	1.6	BUOY	1.6
3	INTERMEDIATE	12.25	9.625	NEW	API	N	4000	5100	4000	5100			1100	HCK-55	40	LTC	1.125	1.25	BUOY	1.6	BUOY	1.6
4	PRODUCTION	8.75	7.0	NEW	API	N	0	7500	0	7500			7500	L-80	26	OTHER - BTC	1.125	1.25	BUOY	1.6	BUOY	1.6

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Nkatata_001_20171228102507.docx

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Casing Attachments

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Nkatata_001_20171228102518.docx

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Nkatata_001_20171228102528.docx

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Nkatata_001_20171228102539.docx

Section 4 - Cement

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	925	400	1.75	13.5	700	15	Class C	4% bentonite, 6% CD-32, 5% CaCl2 (TOC @ Surface)
SURFACE	Tail		0	925	300	1.34	14.8	402	15	Class C	0.1 %C-45 econolite
INTERMEDIATE	Lead		0	5100	725	2.3	12.4	1668	15	Class C	5.0% Bentonite + 5.28#/sk salt + 1.25% C-45 econolite + .75% defoamer + .2% C-49 expansive additive (TOC @ Surface)
INTERMEDIATE	Tail				200	1.34	14.8	268	15	Class C	0.1%C-45 econolite + .2% C-49 expansive additive
INTERMEDIATE	Lead		0	5100	725	2.3	12.4	1668	15	Class C	5.0% Bentonite + 5.28#/sk salt + 1.25% C-45 econolite + .75% defoamer + .2% C-49 expansive additive (TOC @ Surface)
INTERMEDIATE	Tail				200	1.34	14.8	268	15	Class C	0.1%C-45 econolite + .2% C-49 expansive additive
PRODUCTION	Lead		0	7500	550	3.18	11	1749	15	TXI Lightweight	.81#/sk salt + .25% C-45 + 1.5#/sk phenoseal + 6% STE + .2% Citric Acid + .1% C-19 fluid loss + .25% CSA-1000 fluid loss + 6#/sk kol seal
PRODUCTION	Tail				200	1.25	14.2	250	15	50:50 (Class H:Poz)	.08% CSA-1000 fluid loss + .3% C-47B fluid loss + .2% C-20 retarder

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2: An electronic pit volume totalizer will be utilized on the circulating system to monitor pit volume, flow rate, pump pressure and stroke rate. See drilling doc for additional details.

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times. A kelly cock will be kept in the drill string at all times. A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

Describe the mud monitoring system utilized: An electronic pit volume totalizer (PVT) will be utilized on the circulating system to monitor pit volume, flow rate, pump pressure and stroke rate.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	925	OTHER : fresh gel	8.6	8.8							
925	5100	SALT SATURATED	10	10.4							
5100	7500	OTHER : Cut brine	8.7	9.2							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

NA

List of open and cased hole logs run in the well:

CNL/FDC,GR

Coring operation description for the well:

NA

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 3590 **Anticipated Surface Pressure:** -148.91

Anticipated Bottom Hole Temperature(F): 140

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? NO

Hydrogen sulfide drilling operations plan:

H2S_Plan_Summary_CC_20171110165855.docx

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Nkatata_SWD_001_drilling_plan_20180103124026.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

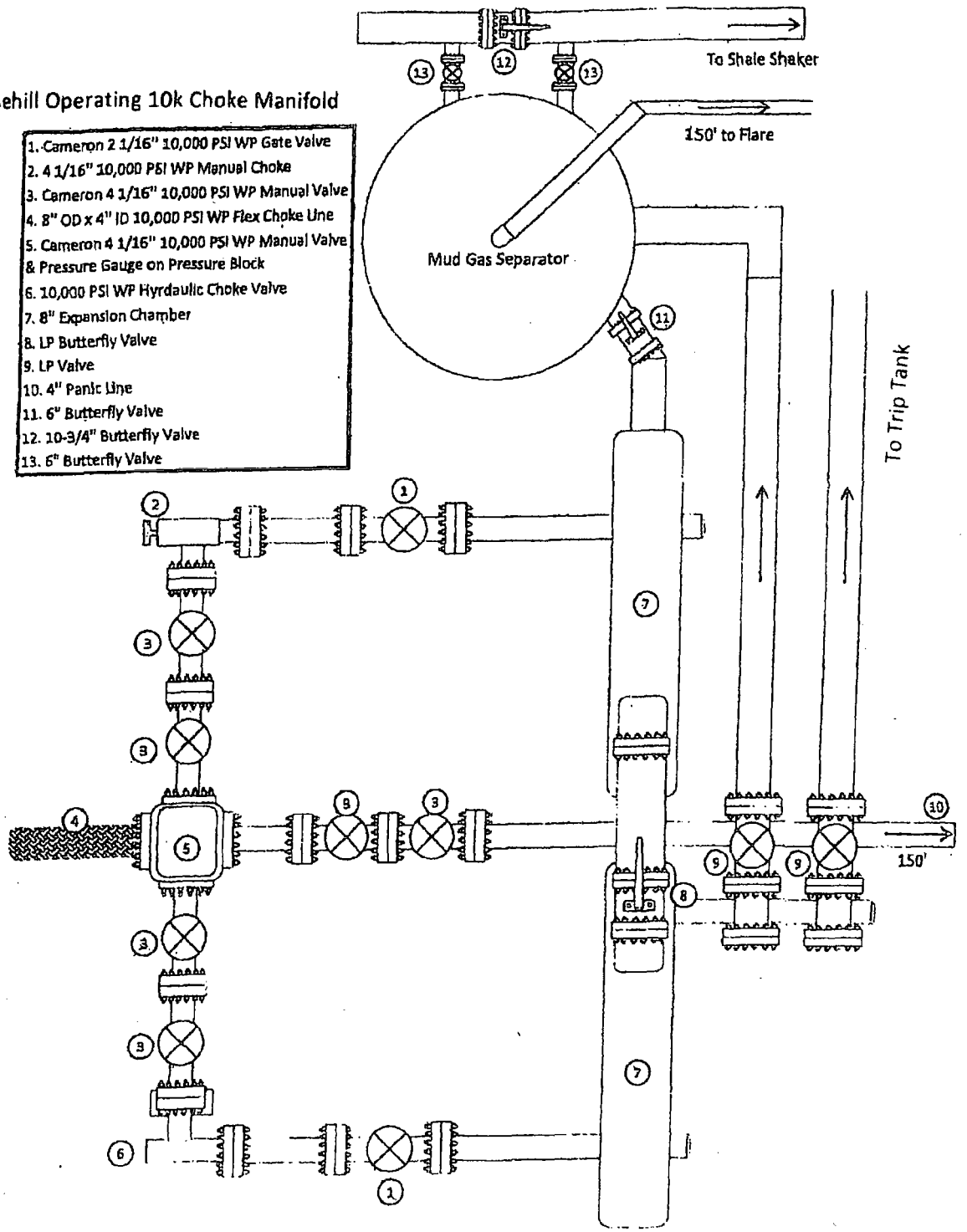
HP416_Choke_Hose_Test_Certificate_20171204124450.pdf
Well_Control_Plan_20171228104333.docx
Nkatata_SWD__1_wellhead_diagram_20171228104428.pdf

Other Variance attachment:

Additional_Variance_Requests_20171114145159.docx

Rosehill Operating 10k Choke Manifold

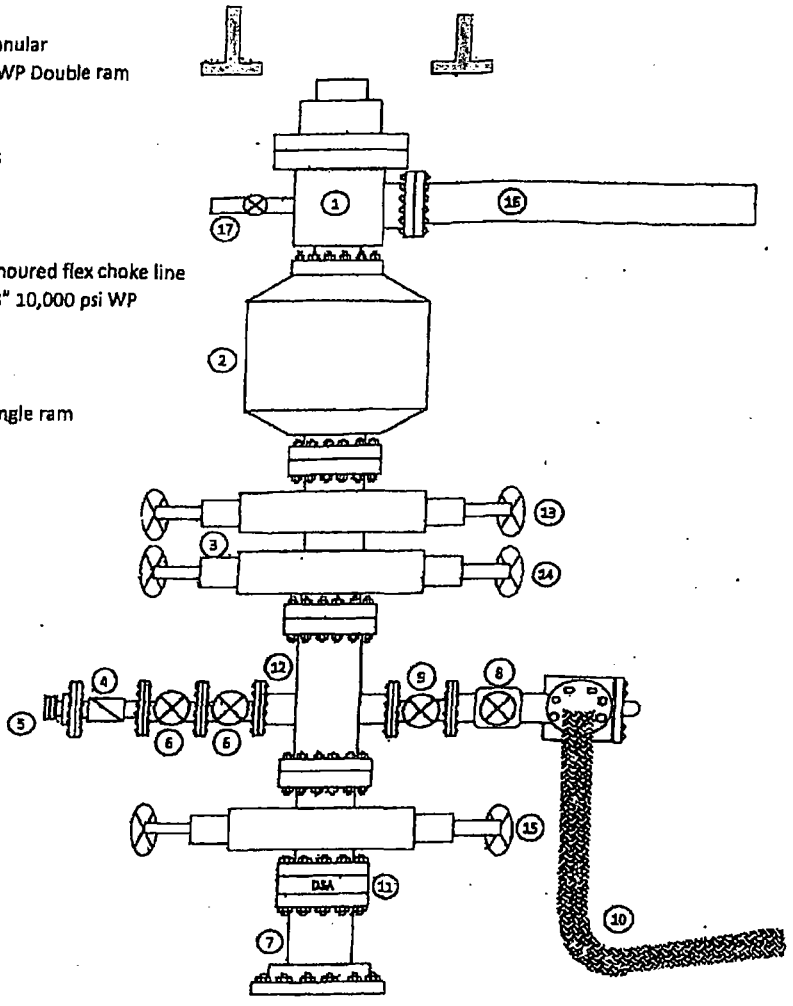
1. Cameron 2 1/16" 10,000 PSI WP Gate Valve
2. 4 1/16" 10,000 PSI WP Manual Choke
3. Cameron 4 1/16" 10,000 PSI WP Manual Valve
4. 8" OD x 4" ID 10,000 PSI WP Flex Choke Line
5. Cameron 4 1/16" 10,000 PSI WP Manual Valve & Pressure Gauge on Pressure Block
6. 10,000 PSI WP Hyrdaulic Choke Valve
7. 8" Expansion Chamber
8. LP Butterfly Valve
9. LP Valve
10. 4" Panic Line
11. 6" Butterfly Valve
12. 10-3/4" Butterfly Valve
13. 6" Butterfly Valve



Rosehill Operating 10k BOP Stack

Rig Floor

1. 13 5/8" rotating head
2. 13 5/8" 5000 psi WP Shaffer style Annular
3. 13 5/8" Cameron U Type 10,000 psi WP Double ram
4. 2 1/16" 10,000 psi check valve
5. 10,000 psi WP 1502 Union to kill line
6. 2 1/16" 10,000 psi WP manual valves
7. 13 5/8" 10,000 psi WP spacer spool
8. 4 1/16" 10,000 psi WP HCR valve
9. 4 1/16" 10,000 psi WP manual valve
10. 6" OD X 3" ID 10,000 psi WP steel armoured flex choke line
11. DSA – 13 5/8" 10,000 psi WP X 13 5/8" 10,000 psi WP
12. 13 5/8" 10,000 psi WP mud cross
13. 4 ½" – 7" variable bore pipe rams
14. Blind rams
15. 13 5/8" Cameron U Type 10,000 psi single ram
16. 10" flow line
17. 2" fillup line



Casing Assumptions Worksheet-Nkatata Federal SWD #001

The below table illustrates the proposed casing design, as well as the minimum acceptable design factors for casing loads per Rosehill Operating Standards.

Csg Type	Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension	DF_{min} Coupling
Surface	17.5"	0 – 925'	13.375 "	54.5#	J55	STC	1.125	1.25	1.6	1.6
Intermediate	12.25"	0 – 4000'	9.625"	40#	J55	LTC	1.125	1.25	1.6	1.6
Intermediate	12.25	4000'-5100'	9.625"	40#	HCK55	LTC	1.125	1.25	1.6	1.6
Production	8.75"	0'-7500'	7"	26#	L80	BTC	1.125	1.25	1.6	1.6

The actual safety factors specific to the Nkatata #1 well are listed in the table below.

Csg Type	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension	DF_{min} Coupling
Surface	2.8	1.8	9.2	5.5
Intermediate	2.5	2.6	2.2	1.8
Intermediate	2.8	2.6	4.6	5.1
Production	1.5	2.1	2.5	2.1

These design factors are derived based on the following assumptions:

Surface:
Collapse – full evacuation
Burst – 1500 psi casing test
Tension – buoyant weight of casing at depth + 50,000 lb allowable overpull
Coupling– buoyant weight of casing at depth + 50,000 lb allowable overpull

Intermediate(0-4000'):
Collapse – half evacuation with minimum mud weight of 10#
Burst – 1500 psi casing test
Tension – buoyant weight of casing at depth + 100,000 lb allowable overpull
Coupling– buoyant weight of casing at depth + 100,000 lb allowable overpull

Intermediate(4000'-5100'):
Collapse – half evacuation with minimum mud weight of 8.4#
Burst – max expected pore pressure minus gas column to surface
Tension – buoyant weight of casing at depth + 100,000 lb allowable overpull
Coupling - buoyant weight of casing at depth + 100,000 lb allowable overpull

Production
Collapse – full evacuation
Burst – 3500 psi treating pressure
Tension – buoyant weight of casing at depth + 75,000 lb allowable overpull
Coupling - buoyant weight of casing at depth + 75,000 lb allowable overpull

Casing Assumptions Worksheet-Nkatata Federal SWD #001

The below table illustrates the proposed casing design, as well as the minimum acceptable design factors for casing loads per Rosehill Operating Standards.

Csg Type	Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension	DF_{min} Coupling
Surface	17.5"	0 – 925'	13.375 "	54.5#	J55	STC	1.125	1.25	1.6	1.6
Intermediate	12.25"	0 – 4000'	9.625"	40#	J55	LTC	1.125	1.25	1.6	1.6
Intermediate	12.25	4000'-5100'	9.625"	40#	HCK55	LTC	1.125	1.25	1.6	1.6
Production	8.75"	0'-7500'	7"	26#	L80	BTC	1.125	1.25	1.6	1.6

The actual safety factors specific to the Nkatata #1 well are listed in the table below.

Csg Type	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension	DF_{min} Coupling
Surface	2.8	1.8	9.2	5.5
Intermediate	2.5	2.6	2.2	1.8
Intermediate	2.8	2.6	4.6	5.1
Production	1.5	2.1	2.5	2.1

These design factors are derived based on the following assumptions:

Surface:
Collapse – full evacuation
Burst – 1500 psi casing test
Tension – buoyant weight of casing at depth + 50,000 lb allowable overpull
Coupling– buoyant weight of casing at depth + 50,000 lb allowable overpull

Intermediate(0-4000'):
Collapse – half evacuation with minimum mud weight of 10#
Burst – 1500 psi casing test
Tension – buoyant weight of casing at depth + 100,000 lb allowable overpull
Coupling– buoyant weight of casing at depth + 100,000 lb allowable overpull

Intermediate(4000'-5100'):
Collapse – half evacuation with minimum mud weight of 8.4#
Burst – max expected pore pressure minus gas column to surface
Tension – buoyant weight of casing at depth + 100,000 lb allowable overpull
Coupling - buoyant weight of casing at depth + 100,000 lb allowable overpull

Production
Collapse – full evacuation
Burst – 3500 psi treating pressure
Tension – buoyant weight of casing at depth + 75,000 lb allowable overpull
Coupling - buoyant weight of casing at depth + 75,000 lb allowable overpull

Casing Assumptions Worksheet-Nkatata Federal SWD #001

The below table illustrates the proposed casing design, as well as the minimum acceptable design factors for casing loads per Rosehill Operating Standards.

Csg Type	Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension	DF_{min} Coupling
Surface	17.5"	0 – 925'	13.375 "	54.5#	J55	STC	1.125	1.25	1.6	1.6
Intermediate	12.25"	0 – 4000'	9.625"	40#	J55	LTC	1.125	1.25	1.6	1.6
Intermediate	12.25	4000'-5100'	9.625"	40#	HCK55	LTC	1.125	1.25	1.6	1.6
Production	8.75"	0'-7500'	7"	26#	L80	BTC	1.125	1.25	1.6	1.6

The actual safety factors specific to the Nkatata #1 well are listed in the table below.

Csg Type	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension	DF_{min} Coupling
Surface	2.8	1.8	9.2	5.5
Intermediate	2.5	2.6	2.2	1.8
Intermediate	2.8	2.6	4.6	5.1
Production	1.5	2.1	2.5	2.1

These design factors are derived based on the following assumptions:

Surface:
Collapse – full evacuation
Burst – 1500 psi casing test
Tension – buoyant weight of casing at depth + 50,000 lb allowable overpull
Coupling– buoyant weight of casing at depth + 50,000 lb allowable overpull

Intermediate(0-4000'):
Collapse – half evacuation with minimum mud weight of 10#
Burst – 1500 psi casing test
Tension – buoyant weight of casing at depth + 100,000 lb allowable overpull
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Tension – buoyant weight of casing at depth + 100,000 lb allowable overpull
Coupling - buoyant weight of casing at depth + 100,000 lb allowable overpull

Production
Collapse – full evacuation
Burst – 3500 psi treating pressure
Tension – buoyant weight of casing at depth + 75,000 lb allowable overpull
Coupling - buoyant weight of casing at depth + 75,000 lb allowable overpull

Casing Assumptions Worksheet-Nkatata Federal SWD #001

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Production
Collapse – full evacuation
Burst – 3500 psi treating pressure
Tension – buoyant weight of casing at depth + 75,000 lb allowable overpull
Coupling - buoyant weight of casing at depth + 75,000 lb allowable overpull

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°:	378	
PURCHASER:	ContiTech Oil & Marine Corp.			P.O. N°:	4500398355	
CONTITECH RUBBER order N°:	538079	HOSE TYPE:	3" ID	Choke and Kill Hose		
HOSE SERIAL N°:	67095	NOMINAL / ACTUAL LENGTH:		10,67 m / 10,75 m		
W.P. 68,9 MPa	10000 psi	T.P. 103,4 MPa	15000 psi	Duration:	60	min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 20 MPa

COUPLINGS Type	Serial N°		Quality	Heat N°
3" coupling with	8949	8948	AISI 4130	A1126U
4 1/16" 10K API b.w. Flange end			AISI 4130	035285

NOT DESIGNED FOR WELL TESTING **API Spec 16 C**

Temperature rate:"B"

All metal parts are flawless

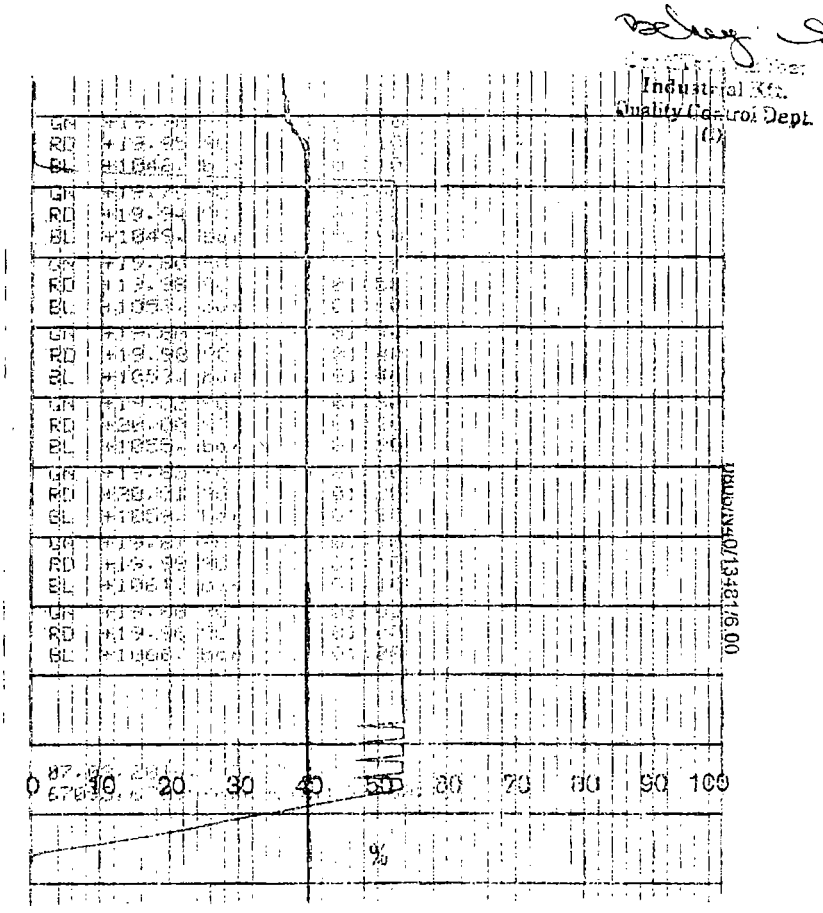
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

COUNTRY OF ORIGIN HUNGARY/EU

Date:	Inspector	Quality Control
07. March 2014.		ContiTech Rubber Industrial Kft. Quality Control Dept.

ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE *No: 376, 378, 379, 380*



Continental CONTITECH

Hose Data Sheet

CRI Order No.	538079
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500398355
Item No.	1
Hose Type	Flexible Hose
Standard	**API SPEC 16 C**
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

Rosehill Operating Well Control Plan-Nkatata Federal SWD #001

A. **Component and Preventer Compatibility Table**

The tables below outline the tubulars and compatible well control devices used in each hole section. A minimum of two barriers for well control will be in place at all times during the drilling of each hole section.

Intermediate Hole Section (12 ¼"): (<5M MASP)

Component	OD	Preventer	RWP
Drillpipe	5"	Upper 4.5-7" VBR Lower 4.5-7" VBR	10M
HWDP	5"	Upper 4.5-7" VBR Upper 4.5-7" VBR	10M
Drill collars	6.5"	Upper 4.5-7" VBR Upper 4.5-7" VBR	10M
Drill collars	8"	Annular	5M
Mud Motor/NMDC	8"	Annular	5M
Intermediate Casing	9.625"	Annular	5M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

Production Hole Section (8 3/4"): (<5M MASP)

Component	OD	Preventer	RWP
Drillpipe	5"	Upper 4.5-7" VBR Lower 4.5-7" VBR	10M
HWDP	5"	Upper 4.5-7" VBR Lower 4.5-7" VBR	10M
Drill collars	6.5"	Upper 4.5-7" VBR Lower 4.5-7" VBR	10M
Mud Motor/NMDC	6 3/4"	Upper 4.5-7" VBR Lower 4.5-7" VBR	10M
Production Casing	7"	Upper 4.5-7" VBR Lower 4.5-7" VBR	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

VBR = Variable Bore Ram. Compatible range listed in chart.
HWDP = Heavy Weight Drill Pipe

NMDC = Non magnetic drill collar

B. Well Control Procedures

These steps outline the proper method for shutting the well in during a well control event, based on the current activity.

General Procedure While Drilling

1. Space out drill string.
2. Shut down pumps and rotary.
3. Open HCR.
4. Close annular preventer. (choke already closed)
5. Confirm shut-in.
6. Notify tool pusher/company representative.
7. Read and record the following:
    a. SIDPP and SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan.
9. If pressure has built or is anticipated during the kill to reach 3500 psi, confirm spacing and swap to the upper pipe ram.

General Procedure While Tripping

1. Space out (get closest available tool joint to floor).
2. Stab full opening safety valve and close same.
3. Open HCR.
4. Close annular preventer. (choke already closed.)
5. Confirm shut-in.
6. Notify tool pusher/company representative.
7. Read and record the following
    a. SIDPP and SICP
    b. Pit gain
    c. Time
    d. Regroup and identify forward plan.
    e. If pressure has built or is anticipated during the kill to reach 3500 psi, confirm spacing and swap to the upper pipe ram.

General Procedure While Running Casing

1. Space out (get closest available tool joint to floor).
2. Stab crossover and safety valve and close same.
3. Open HCR
4. Close annular preventer. (choke already closed)
5. Confirm shut-in.
6. Notify tool pusher/company representative.
7. Read and record the following:
    a. SIDPP and SICP

b. Pit gain
c. Time
d. Regroup and identify forward plan.
e. **Only if running 7" casing**- If pressure has built or is anticipated during the kill to reach 3500 psi, confirm spacing and swap to the upper pipe ram.

General Procedure With No Pipe In Hole (Open Hole)

1. Open HCR
2. Shut-in with blind rams. (choke already closed)
3. Confirm shut-in
4. Notify tool pusher/company representative
5. Read and record the following:
    a. SICP
    b. Pit gain
    c. Time
6. Regroup and identify forward plan

General Procedures While Pulling BHA thru Stack

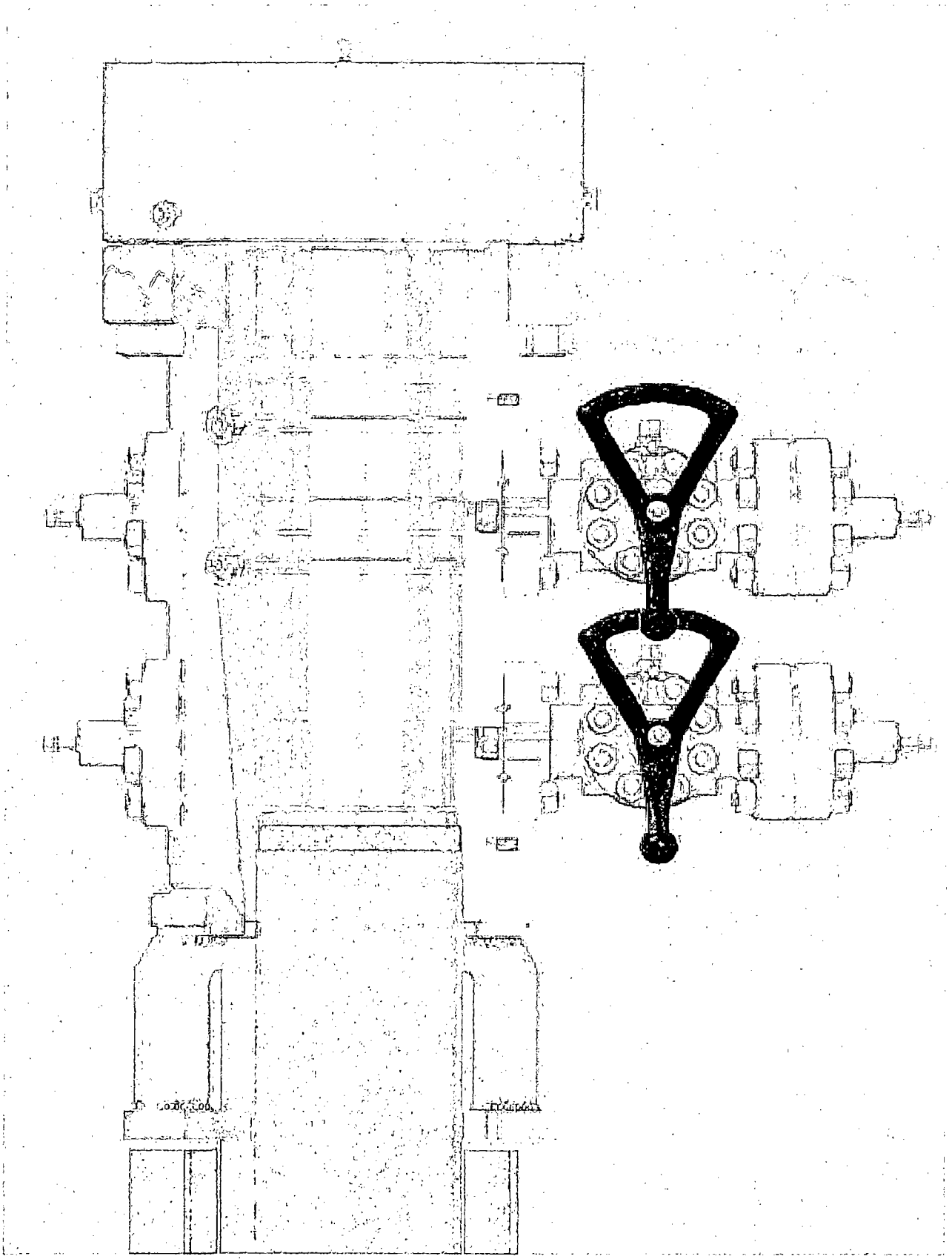
1. PRIOR to pulling last joint of drill pipe thru the stack.
    a. Perform flow check, if flowing:
    b. Stab full opening safety valve and close same.
    c. Open HCR.
    d. Space out drill string with tool joint just beneath the upper pipe ram.
    e. Shut-in using upper pipe ram. (choke already closed)
    f. Confirm shut-in.
    g. Notify tool pusher/company representative.
    h. Read and record the following:
        h.i. SIDPP and SICP
        h.ii. Pit gain
        h.iii. Time
        h.iv. Regroup and identify forward plan

2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
    a. Stab crossover and full opening safety valve and close
    b. Space out drill string with upset just beneath the compatible pipe ram.
    c. Open HCR
    d. Shut-in using compatible pipe ram. (choke already closed)
    e. Confirm shut-in.
    f. Notify tool pusher/company representative
    g. Read and record the following:
        g.i. SIDPP and SICP
        g.ii. Pit gain
        g.iii. Time
        g.iv. Regroup and identify forward plan

3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
    a. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.
    b. If impossible to pick up high enough to pull the string clear of the stack.
    c. Stab crossover, make up one joint/stand of drill pipe, and full opening safety valve and close.
    d. Space out drill string with tool joint just beneath the upper pipe ram.
    e. Open HCR
    f. Shut-in using upper pipe ram. (choke already closed).
    g. Confirm shut-in.
    h. Notify tool pusher/company representative.
    i. Read and record the following:
        i.i. SIDPP and SICP
        i.ii. Pit gain
        iii. Time
    j. Regroup and identify forward plan

Nkatata Federal SWD #001

Wellhead Diagram



Additional Variance Requests-Rosehill Talco Lease

Tatanka Federal Well #001H

1. Casing
    a. Variance is requested to wave the centralizer requirements for the 10.75" semi flush casing in the 12.25" hole size.
2. Pressure Control
    a. Variance is requested to use a co-flex line between the Bop and choke manifold, instead of using a 4" Od steel line
    b. Variance is also requested to use a 5,000 psi WP annular preventer

APD ID: 10400025877 **Submission Date:** 01/11/2018

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Well Type: INJECTION - DISPOSAL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Existing_Roads_for_SUPO_20171205131528.pdf

Existing Road Purpose: ACCESS **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? YES

Existing Road Improvement Description: Grading

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? NO

Attach Well map:

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Existing Wells description: One capped well is on an existing pad in the middle of the lease. The pad will be reused as the site of the compressor. Top portion of the existing pad that is not being used will be reclaimed.

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description:

Production Facilities map:

Production_Facilities_Diagram_20171128155135.docx

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING, INTERMEDIATE/PRODUCTION CASING, INTERMEDIATE/PRODUCTION CASING, INTERMEDIATE/PRODUCTION CASING, STIMULATION, STIMULATION, STIMULATION, STIMULATION, SURFACE CASING, SURFACE CASING, SURFACE CASING, SURFACE CASING
Water source type: OTHER

Describe type: Lined mega pit holding ground water

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: PIPELINE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 400000

Source volume (acre-feet): 51.55724

Source volume (gal): 16800000

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION
Water source type: OTHER

Describe type: Lined mega pit holding ground water

Source latitude:

Source longitude:

Source datum:

Water source permit type:

Source land ownership:

Water source transport method:

Source transportation land ownership:

Water source volume (barrels): 400000

Source volume (acre-feet): 51.55724

Source volume (gal): 16800000

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING
Describe type: lined pit

Water source type: OTHER

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: PIPELINE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 400000

Source volume (acre-feet): 51.55724

Source volume (gal): 16800000

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING
Describe type:

Water source type: OTHER

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership:

Water source transport method:

Source transportation land ownership:

Water source volume (barrels): 400000

Source volume (acre-feet): 51.55724

Source volume (gal): 16800000

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING
Describe type: Lined Mega pit holding ground water

Water source type: OTHER

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: PIPELINE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 400000

Source volume (acre-feet): 51.55724

Source volume (gal): 16800000

Water source and transportation map:

Tatanka_Facilities_Plan_1_10_2018_20180111111522.pdf

Water source comments: Operator will use established or constructed oil and gas roads to transport water to well site. Operator will try to utilize the identified access route in the surface use plan.
New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Clean caliche from BLM or third party source will be used

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: GARBAGE

Waste content description: Garbage and trash produced during drilling and competion operations

Amount of waste:

Waste disposal frequency : Weekly

Safe containment description: Collected in trash containers

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** OTHER
Disposal type description:

Disposal location description: Pecos City Sanitary Landfill

Waste type: SEWAGE

Waste content description: Human waste and grey water

Amount of waste:

Waste disposal frequency : Weekly

Safe containment description: Above-ground poly tanks provided by trailerhouse rental company

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE
Disposal type description:

Disposal location description: Carlsbad City Landfill

Waste type: PRODUCED WATER

Waste content description: Produced water from well during drilling and completion operations

Amount of waste: 3000 barrels

Waste disposal frequency : Daily

Safe containment description: Stored in water tanks on lease before injection

Safe containmant attachment:

Waste disposal type: ON-LEASE INJECTION **Disposal location ownership:** FEDERAL

Disposal type description:

Disposal location description: On-lease injection well (SWD)

Waste type: DRILLING

Waste content description: Drilled cuttings

Amount of waste: 109066 gallons

Waste disposal frequency : Weekly

Safe containment description: Stored in steel tanks until taken to disposal location

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE
Disposal type description:

Disposal location description: Sundance Services near Eunice, NM (state certified)

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Waste type: COMPLETIONS/STIMULATION

Waste content description: Non-hazardous waste mud/cement from drilling process

Amount of waste: 10000 barrels

Waste disposal frequency : Weekly

Safe containment description: 500 bbl frac tanks

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL **Disposal location ownership:** PRIVATE FACILITY

Disposal type description:

Disposal location description: Sundance Services near Eunice, NM

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Drill cuttings will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Nkatata_SWD__1_location_schematic_20171228105439.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:**

Multiple Well Pad Number:

Recontouring attachment:

Drainage/Erosion control construction: Reconstructed roads, on surface under the jurisdiction of the Bureau of Land Management, will be constructed as outlined in the BLM "Gold Book" and to meet the standards of the anticipated traffic flow and all anticipated weather requirements as needed. Construction will include ditching, draining, crowning and capping or sloping and dipping the roadbed as necessary to provide a well-constructed and safe road. Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.

Drainage/Erosion control reclamation: The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled. All disturbed areas, including pads and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion is controlled.

Well pad proposed disturbance (acres): 5.7
Road proposed disturbance (acres): 4.8
Powerline proposed disturbance (acres): 0
Pipeline proposed disturbance (acres): 0
Other proposed disturbance (acres): 0
Total proposed disturbance: 10.5

Well pad interim reclamation (acres): 2.3
Road interim reclamation (acres): 0
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 2.3

Well pad long term disturbance (acres): 3.4
Road long term disturbance (acres): 0
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres): 0
Other long term disturbance (acres): 0
Total long term disturbance: 3.4

Disturbance Comments: Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment. All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.

Reconstruction method: All disturbed areas, including pads and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. After all the disturbed areas have been properly prepared, the areas will be seeded with the proper BLM seed mixture, free of noxious

weeds. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.
Soil treatment: None

Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Seed use location:

PLS pounds per acre: **Proposed seeding season:**

Total pounds/Acre:

Seed Summary	
Seed Type	**Pounds/Acre**

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep: After all the disturbed areas have been properly prepared, the areas will be seeded with the proper BLM seed mixture, free of noxious weeds. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: To BLM standards

Weed treatment plan attachment:

Monitoring plan description: To BLM standards

Monitoring plan attachment:

Success standards: To BLM standards

Pit closure description: NA

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT,BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT,PRIVATE OWNERSHIP,STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: CARLSBAD, NM

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: ROSEHILL OPERATING COMPANY LLC

Well Name: NKATATA FEDERAL **Well Number:** 001

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: 11/2/17 with Jesse Bassett- Tatanka 001H, 002H, 003H, 004H, 005H and 006H; Nkatata 001

Other SUPO Attachment

NKATATA_FEDERAL_SWD__001_20171227155722.docx
30_ROW_gas_line_running_N_from_compressor_20180321115951.pdf
55_ROW_Signed_02_24_18_20180321115951.pdf
150_Easement_Signed_12_22_17_20180321115952.pdf
Compressor_Pad_Signed_12_24_17_20180321115953.pdf
Sec_11_CTB_Signed_02_20_18_20180321115955.pdf
Rosehill_Section_11_Easements_Signed_02_15_18_20180321115954.pdf
Sec_11_Easement_Signed_02_20_18_20180321115955.pdf
Section_12_Frac_Pond_Signed_11_20_17_20180321115956.pdf

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

2017-0805

LEGAL DESCRIPTION

LEGAL DESCRIPTION of a proposed 15.50 Acre lease site located in Section 12 and 13, T-26-S, R-35-E, N.M.P.M., Lea County, New Mexico, and being more particularly described as follows:

BEGINNING at the Northwest corner of this tract, which bears N 72°09'38" E, a distance of 2,409.3 feet from a USGLO Brass Cap found for the Southwest corner of said Section 12;

THENCE N 89°32'04" E, a distance of 900.0 feet to the Northeast corner of this tract;

THENCE S 00°27'56" E, at a distance of 715.7 feet pass the South line of said Section 12 and the North line of said Section 13, continuing on for a total distance of 750.0 feet to the Southeast corner of this tract, which point bears S 88°31'38" W, a distance of 2,087.0 feet from a USGLO Brass cap found for the Southeast corner of said Section 12;

THENCE S 89°32'04" W, a distance of 900.0 feet to the Southwest corner of this tract;

THENCE N 57°00'54" W, at a distance of 33.2 pass the North line of said Section 13 and the South line of said Section 12, continuing on for a total distance of 750.0 feet to the POINT OF BEGINNING. Subject lease site contains a total of 15.50 acres of land.

Plat

See Page 1 of 2

NOTE:
1) Bearings shown hereon are transverse Mercator Grid and conform to the New Mexico Coordinate System "New Mexico East Zone", North American Datum of 1983. Distances are grid values.
2) Ownership shown per NM OCD Oil and Gas Map, New Mexico Oil Conservation Division.

CERTIFICATION:
I hereby certify that this plat was made from notes taken in the field in a bona fide survey made under my supervision.

LINDSAY GYGAX NEW MEXICO 23263 PROFESSIONAL SURVEYOR

Lindsay Gygax New Mexico P.L.S. No. 23263

11-20-17

WEST COMPANY
Land Surveyors ◻ Civil Engineers
110 W. Louisiana Ave., Suite 110, Midland, Texas 79701
(432) 687-0865 - FAX (432)687-0868

ROSEHILL OPERATING COMPANY, LLC

15.50 ACRE LEASE SITE

Section 12 & 13
Township 26 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

Scale: 1"= 1000'	W.O.: 2017-0805
Surveyed: 11/14/2017	Drawn By: SC

File: J:\2017\2017-0805\2017-0805 NAD 83.dwg

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location: ONLEASE

PWD surface owner: BLM **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner: FED

Injection well type: NEW

Injection well number: 001H

Injection well name: Nkatata

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

05/16/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001484

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: